ACTION START-LIST FOR NORTH LAKE WASHINGTON CHINOOK POPULATION (INCLUDES SAMMAMISH RIVER)

Technical priorities from WRIA 8 Conservation Strategy are listed in bold. Land use, public outreach, and site specific actions are listed for each technical priority. Technical priorities are interrelated, and many actions address multiple technical priorities.

BEAR/COTTAGE LAKE/COLD CREEKS RECOMMENDATIONS (TIER 1)

Identify and protect headwater areas, wetlands, and sources of groundwater to maintain natural hydrologic processes and temperatures that support Chinook.

Basinwide recommendations:

- Protect headwater wetlands, seeps, and groundwater recharge areas through critical areas ordinances, critical aquifer recharge area protections (CARAs), incentives, and acquisition. Support with appropriate public outreach to convey reasons behind regulations to protect groundwater sources, consequences of not employing them, and ultimate benefits to environment and people. (N1, N722, N723)
- Determine source of the Cold Creek groundwater springs in Cottage Lake Creek and develop protective measures to adequately protect them. Cold Creek headwaters cross the Urban Growth Boundary; growth within Woodinville should be managed to minimize impacts. (N4)
- Expand groundwater protection outreach messages to include the relationship between ground and surface water and inter-connectedness of all hydrologic systems. Include messages in water utility billings, newspaper articles, and school curricula; explore opportunities to partner with business such as local bottled water company. (N722, N723, N724)

Protect and restore forest cover, soil infiltrative capacity and wetlands, and minimize increases in impervious surfaces, to maintain watershed function and hydrologic integrity.

Basinwide recommendations:

- Continue approach taken in King County during past decade to protect forest cover and riparian buffers, including: enforcing existing regulations, providing a range of incentives and a basin steward working with streamside landowners, and providing forest stewardship plans. Support Snohomish County's incentive programs such as Transfer of Development Rights for farmlands and Reduced Drainage Discharge Demonstration Program. Properties protected through acquisition, easements, etc. must be maintained over long term. (N7, N701, N702, N704)
- Promote low impact development throughout Tier 1 and 2 subareas, to accommodate additional growth in urban and rural areas, while protecting ecological functions. Enlist help of builders practicing sustainable development to promote benefits of forest cover in protecting water quality. Provide recognition through media and professional awards to those using pervious paving, grass/green roofs, and other low impact development techniques. Work with the Snohomish Sustainable Development Task Force and other public and private stakeholders to plan and implement low impact development techniques. (N6, N91-93, N719, N720, N721)
- Increase outreach concerning the benefits of trees and basinwide forest coverage to protect water quality and maintain instream flows. Coordinate with nurseries, home improvement centers, and arborists to develop a marketing campaign promoting the benefit of trees to salmon and watershed health.
- Employ basinwide stewards to work with property owners, land trusts, and agencies in order to identify and secure forested, wetland, and riparian areas. Encourage neighborhood and

community protection associations that foster the ethic of voluntary stewardship, enlist community support to purchase forest tracts and build bridges between property owners, agencies, and local governments. (N702, N704)

Within Urban Growth Areas:

- Continue to absorb majority of growth in urban areas, while protecting and restoring forest and promoting low impact development, to maintain and improve water quality and flows. (N5)
- Protect undeveloped forested parcels in Bear Reach 6. (N216)

Outside Urban Growth Areas:

- There is considerable growth pressure in Bear/Cottage Lake creeks outside the Urban Growth Area (UGA), as urban-type development and related infrastructure continue to expand (e.g., Maltby UGA, Redmond Ridge UPD, city parks). Jurisdictions should not move the UGA boundary unless such change is beneficial to salmon; they should encourage low impact development, clustering, low density livestock or garden enterprises with appropriate best management practices, and other measures to protect environmental functions in rural areas. It may be necessary to acquire high quality rural properties to insure their long-term protection. (N6)
- Adopt and strictly enforce stream/wetland buffers and forest cover protections through King and Snohomish counties' critical areas ordinance updates. Forest cover protections should account for site geology, soils, topography, and vegetation to maximize retention and infiltration. (N10)
- Protect and restore forest cover throughout unincorporated area. In particular, protect large, undeveloped forested parcels in Lower Bear Reach 7 and Upper Bear Reaches 15/16 and 12. Restore forest cover on cleared, undeveloped properties in Lower Bear Reach 7 and Upper Bear Reaches 9 and 8. (Note: Reaches listed in EDT priority order). (N224, N277, N256, N220, N235, N228)

Protect and restore riparian vegetation to improve channel stability, provide sources of large woody debris that can contribute to creation of pools, and reduce peak water temperatures that favor non-native species.

Basinwide:

- Implement regulations and incentives to protect and restore riparian buffers, through critical areas ordinances and Shoreline Master Program updates; limit impacts of trails and other facilities in buffers. Implement riparian restoration by streamside landowners through King County Livestock Program, farm plans, and cost share. (N12)
- Expand outreach to streamside property owners about shoreline landscape design, maintenance, and streambank armoring alternatives, through direct mail brochures, videos, shoreline homeowners kits (including expansion of "Streamside Living Welcome Wagon"), and workshops (including expansion of Natural Yard Care Program). (N703, N707, N708, N709, N725)
- Offer educational opportunities to landscape designers/contractors on riparian design/installation, alternative to invasive species, and promote use of compost. (N714, N721)

Within Urban Growth Areas:

- Carry out riparian restoration of publicly owned properties in Bear Creek Reach 3. (N206)

Outside Urban Growth Areas:

- Remove invasive plants and plant riparian buffers along Bear Creek throughout Paradise Valley Conservation Area (Reach 16). (N276)

- Work with private property owners upstream of Native Growth Protection Easements in Cottage Lake Creek Reach 3 to restore riparian buffers. (N298)

Protect and restore floodplain connectivity and increase off-channel habitat by minimizing road crossings, reducing channel confinement, and removing floodplain structures. Protect and increase channel complexity, including large, woody debris, which contribute to channel stability and development of pools, trap sediment, and reduce water temperature.

Basinwide:

- Limit new development in floodplains; develop and apply standards which minimize impacts to salmon. Minimize number and width of new roads through transportation planning and implementation. (N15)
- Increase public awareness about the value of large woody debris and native vegetation for flood protection, salmon habitat, and healthy streams. Convey through media (e.g., local papers, community newsletters); signage along publicly accessible "model" shoreline; brochures such as King County's *Large Woody Debris and River Safety*; and other outreach venues such as festivals and local cable channels. (N708)

Within Urban Growth Areas:

- Protect former dairy farm in Bear Creek Reaches 4 and 5, and restore riparian conditions, instream channel complexity and increase off-channel habitat. Also reduce inputs of fine sediments into these reaches of Bear Creek. (N211, N208)
- Restore meanders, instream channel complexity, off-channel habitat, and riparian vegetation in lower 3000 feet of Bear Creek (Reach 1), which is currently straightened with armored banks. Enhance mouth of Bear Creek to create cool refuge pool for migrating adults. Work with media to record process and share results with the public. (N201)
- Protect undeveloped, forested properties in Bear Reach 6. (N218)

Outside Urban Growth Areas:

- Continue protection of best remaining habitat through Bear Creek Waterways Program (includes Cottage Lake/Cold creeks). Priority reaches for protection identified through the Waterways program include:
  - Reach A (EDT Reaches in priority order: Bear 15-16, 14) (particularly Stevens, Dolittle parcels) (N272, N268);
  - Reach B (EDT Reaches in priority order: Bear 14, 13, 10, 11, 12) (N264, N246, N253, N257);
  - Reach C (EDT Reaches in priority order: Cottage Lake 4, 5/6) (particularly forested parcels south of NE Woodinville Rd) (N311, N320);
  - Reach D (EDT Reaches in priority order: Bear 7, 8, 9) (particularly parcel near Classic Nursery, Grandstand, Swanson Horse Farm) (N222, N232, N239); and
  - Reach E (EDT Reaches in priority order: Cottage Lake 3, 2, 1) (particularly Nickels Farm) (N303, N293, N286).
- Add large woody debris throughout watershed, but particularly in Bear Creek Reaches 10, 9 and 8 (in EDT priority order). (N242, N235, N226)
- Explore opportunities to improve floodplain connection in Reach 1 of Cottage Creek by removing riprap or artificial constrictions. (N282)

Protect and restore water quality from fine sediments, metals, high temperatures, and bed-scouring high flows.

Basinwide:

- Identify sources and adopt source control of fine sediments and metals in mainstems and tributaries (e.g., from new construction, sand on roads, farms) through stormwater management and clearing and grading ordinances. Jurisdictions should adopt and enforce

- regulations and best management practices consistent with Washington Department of Ecology's 2001 Stormwater Management Manual (or beyond), as part of the NPDES Phase 1 and Phase 2 permit requirements. Water quality problems should be addressed through stormwater programs (including low impact development BMPs), current and future TMDLs, livestock management programs, and upgrade of stormwater facilities (where possible). (N18)
- Work with Washington Department of Transportation and local jurisdictions to pursue opportunities to retrofit existing roadways with stormwater best management practices to improve water quality and flows. Stormwater impacts from major transportation projects (for new and expanded roadways proposed during the next ten years) should also be addressed. (N21-22)
- Coordinate with local business community and non-profits to encourage the use of commercial car washes and carwash kits. Reprint and distribute water quality poster series depicting impacts of everyday practices: washing car, driving car without maintenance, leaving pet wastes unattended, and improperly using lawn chemicals. Promote stormwater best management practices related to parking lot cleaning, storm drain maintenance, and road cleaning. (N726, N727, N729, N731)
- Promote through design competitions and media coverage the use of "rain gardens" and other low impact development practices that mimic natural hydrology. Combine a home/garden tour or "Street of Dreams" type event featuring these landscape /engineering treatments. (N720, N721)
- Publicize emergency call numbers for public to report water quality and quantity problems, non-permitted vegetation clearing, and non-permitted in-stream grading, and wood removal incidents. (N731)

Within Urban Growth Areas:

- Commercial/industrial areas should be investigated for water quality and runoff issues and potential stormwater facilities planned and built. (N23)
- Add water quality treatment for stormwater runoff from freeway in Bear Creek Reach 1. (N202)

Outside Urban Growth Areas:

- Jurisdictions should implement and enforce livestock ordinances, making highest priority those areas that are most susceptible due to fine soils. Work with farmers to adopt and implement farm plans to address water quality and habitat management. Coordinate with other stewardship and education programs, (e.g., Horses for Clean Water). (N19, N702, N713)
- In particular, Swanson Horse Farm property on NE 140th St. in Bear Creek Reach 8 and the Nickels Farm in Cottage Lake Creek Reach 2 need to reduce fine sediment inputs and restore riparian areas. Both farms are targeted for protection under the Bear Creek Waterways program as well. (N236, N289)

Provide adequate stream flow to allow upstream migration and spawning.

Basinwide:

- Adopt stormwater provisions to address high flows, flashiness, and protection of base flows, including forest retention and low impact development best management practices, to improve infiltration. (N20, N27)

- Work with Washington Department of Ecology, local health departments, and water suppliers on regulations, incentives, and education related to impact of surface and groundwater withdrawals, including municipal water withdrawals (e.g., City of Redmond), illegal withdrawals, and exempt wells on flow conditions throughout basin. Determine where illegal surface water withdrawals are occurring and follow-up with enforcement to ensure withdrawals do not continue. (N25-26)
- Increase outreach about illegal water withdrawals, including information about exempt wells (who and what purposes qualify), and maximum quantities that may be withdrawn per day. Clarify distinction between withdrawals taken from wells and diversions taken from the river without a water rights permit. Create citizen-based watchdog groups to watch for people drawing directly from creeks and streams.
- Promote availability of water conservation education and incentive programs (e.g., rebates for efficient toilets, free landscape irrigation audits) to decrease household, commercial, and landscaping irrigation water consumption throughout WRIA 8. (N28, N723)

SAMMAMISH RIVER RECOMMENDATIONS (TIER 1)

Protect and restore cool clean water sources and inflows to the Sammamish River by protecting and restoring large and small tributaries to the Sammamish River, and protecting sources of groundwater.

Basinwide (entire subarea is located within Urban Growth Area):

- Address water quality issues, including temperature and pesticides/herbicides, through stormwater regulations (including NPDES permits), best management practices (including low impact development), education, and incentives targeted at agricultural, commercial, industrial, and residential landowners. (N34-37)
- Work with Washington Department of Ecology, local health departments, and water suppliers to address municipal water withdrawals, illegal withdrawals, exempt wells that impact Sammamish River flows and related high temperatures. Research potential for reclaimed water facilities, shifting of municipal water supply sources to maximize summer flows, and extent of impacts from agricultural, commercial, and industrial sectors. (N29-30, N33)
- Bolster water conservation outreach in Sammamish watershed to increase and maintain summer base flows and reduce summer water temperatures. Carry out through incentive programs (e.g., rebates for efficient appliances, toilets, free landscape irrigation audits); classes on native drought-tolerant landscaping; and waterless carwash promotions. (N733, N734)

In reaches 3 through 6, restore floodplain connections and increase meandering of river by regrading river banks back, creating flood benches at or below ordinary high water mark. (This will concentrate low flows in narrower channel to increase water level and increase shallow habitat for juvenile rearing.) Increasing river meanders will also intercept more sources of groundwater flow.

Basinwide (entire subarea is located with Urban Growth Area):

- Encourage bank regrading and revegetation of riparian buffers (on mainstem and tributaries) during new construction and redevelopment in exchange for regulatory flexibility and incentives, such as providing expertise, expediting permitting, and tax breaks. (N42-43)
- Pursue opportunities to regrade banks, create flood benches at or below high-water mark, and remove non-native plants and plant banks and benches with native vegetation in Reach 5 from NE 90th to NE 100th and Reach 3. Also consider lowering benches from earlier restoration projects in Reach 5 (e.g., Mammoth Sammamish north of Willows Creek on west side and Willows Creek outfall). (N356, N343)

- Restore Transition Zone in Marymoor Park - Restore the left meander below the weir in Reach 6. Restoration elements could include: excavation of new channel, creation of pools, and an overflow bench with wetland vegetation; placement of gravel substrate in new channel; connection to capture hyporehic flows; and revegetation of riparian and wetland areas with native plants. (N358)
- Given the high public use of the Sammamish River trail, restoration projects on the Sammamish River are highly visible and provide good public outreach opportunities. Enhance interpretive efforts on projects and encourage media coverage. Continue to use citizen volunteers to assist in restoration and maintenance of project sites. (N710, N711)

Increase off-channel habitats, enhance and reconnect riparian wetlands to the river, add large woody debris as cover for juvenile fish and to create backwater pools particularly in reaches 1 and 2 in order to improve habitat for juvenile rearing.

Basinwide (entire subarea is located within Urban Growth Area):

- Enhance and connect wetlands and remnant side channels to the river in Reach 2 adjacent to the 102nd Avenue bridge on both on the right and left banks. (N337, N338)
- Sammamish River mouth wetland restoration in Reach 1 - restore wetlands on King County property near mouth and on island. (N332)
- Enhance and reconnect riparian wetlands to river at Wildcliff Shores in Reach 1, across from Swamp Creek. Restore riparian vegetation. (N334)
- Restore large, publicly owned wetland complex at the confluence of Swamp Creek and the Sammamish River, creating a diversity of wetland elevations and habitats in the floodplain. Purchase parcel to the east of Swamp Creek Regional Park for inclusion in restoration project in Reach 1. (N335, N336)

Protect and restore riparian vegetation along the mainstem and tributaries to the Sammamish River to provide shade and reduce water temperatures as well as future source of large woody debris. Should be coordinated with restoration projects to regrade the river banks and restore floodplain.

Basinwide (entire subarea is located with Urban Growth Area):

- Restore shoreline as part of redevelopment of Lake Pointe Property in Reach 1, a 45-acre property on Lake Washington at right bank of Sammamish River mouth that is targeted for cleanup. (N45, N333)
- Continue and expand projects such as Sammamish Re-Leaf and Redmond River Walk to plant early successional riparian vegetation that provide shade, particularly in Reaches 4 and 6. Support riparian restoration in agricultural areas through King County's agriculture programs. Riparian vegetation restoration projects must be sequenced and coordinated with projects to regrade river banks and create flood benches. (N37, N351, N362, N361)
- Encourage neighborhood garden tours of salmon friendly gardens to help residents visualize alternatives to traditional, less eco-friendly landscape treatments. Integrate native plant salvage opportunities into Naturescaping classes, allowing class participants to take home native plants for immediate use both within and surrounding sensitive areas. (N716)

Increase refuge areas for adult migration. Add large woody debris to enhance existing pools and create new pools, particularly in areas of groundwater upwelling. Enhance mouths of small tributaries to create cool refuge pools (add large woody debris, riparian vegetation).

Basinwide (entire subarea is located with Urban Growth Area):

- Enhance the mouths of small tributaries to create refuge areas. Projects should include as appropriate correction of fish passage barriers, riparian restoration, placement of large woody debris, and creation of cool-water refuge pool. Opportunities exist in Reach 2 (Tributaries 0057A, 0068, 0069); Reach 5 (Willows, Peters); Reach 3 (Derby, Gold and Woodin Creeks); and Reach 4 (Tributary 0095A, 0095 and 0096). (Note: Reaches listed in EDT priority order). (N339, N357, N342, N346)

NOTE: See also the Action Start-List for Migratory Areas.

NLW TIER 2 SUBAREA RECOMMENDATIONS

Restore and enhance spatial diversity of the NLW Chinook population through actions that protect and restore Tier 2 streams. In North and Little Bear Creeks, protect forest cover, wetland areas and minimize impervious surfaces to maintain watershed function and hydrologic integrity and protect water quality. Due to more limited protection opportunities in North Creek, restoration to reduce sedimentation and increase floodplain connectivity is also a priority.

LITTLE BEAR

- Tremendous growth pressure exists in Little Bear subarea. Jurisdictions should not move the Urban Growth Area (UGA) boundary, unless such change is beneficial to salmon. Jurisdictions should protect remaining watershed function by managing any additional growth in rural areas through incentives and regulations for forest retention, low impact development, clustering to protect natural areas, transferable development rights, etc. and acquisition where regulation and incentives do not provide sufficient protection. (N67)
- Protect headwaters, wetlands and forest cover through acquisitions or conservation easements, particularly in Reaches 10, 11, 12 and 9. (Note: Reaches listed in EDT priority order).
  - Protect undeveloped, forested wetlands (second-growth forest) in Reach 10 covering approximately 110 acres and 10 parcels owned by two landowners. (N424)
  - Protect 88 acres of mature second-growth forest on right bank of Little Bear Creek in Reach 11. Includes 5 parcels. (N427)
  - Protect forested, headwater wetlands north of 180th to 156th, an approximately 2-mile stretch of Little Bear Creek (Reach 12). Includes 3 wetland complexes totaling over 200 acres. (N429)
  - Protect large, undeveloped forested wetland on both Little Bear (Reach 9) and Great Dane (Reach 1) Creeks. Approximately 100 acres including 10 parcels. (N422)

NORTH CREEK

- Inadequate base flows, flooding, and flashy hydrology pose serious problems in North Creek. Address these through stormwater management (e.g., improved retention of high flows and increased infiltration), improved information about and enforcement of surface and groundwater withdrawals, TMDL implementation, more aggressive water conservation, etc. (N107)
- Protect remaining forest cover and wetlands through critical areas ordinances, stormwater regulations and best management practices, incentives (e.g., tax breaks, expedited permitting), and acquisition where regulation and incentives are not sufficient protection. There are undeveloped forested areas and wetlands in the following reaches: Lower North reaches 4, 3, 2

and Upper North reaches 10, 9, 6, 7. (Note: Reaches listed in EDT priority order). (N71, N376, N372, N370, N371, N396, N393, N385, N389)

- Implement restoration projects to reduce sedimentation and increase floodplain connectivity, particularly in Reaches 2, 4 and 5 (Note: Reaches listed in EDT priority order):
  - Explore possible floodplain restoration on unused baseball diamond and privately owned property between 195th and I-405 in Reach 2. Setback levee, increase flood storage, restore off-channel habitat and add large woody debris. (N367)
  - Enhance incised stream channel in Thrashers Corner area in Reach 4, restore riparian vegetation, plant conifers, and add large woody debris. (N375)
  - Expand existing restoration project upstream and downstream of existing area just upstream of 208th in Reach 5. Restore riparian vegetation, add large woody debris, and enhance side channel habitat. (N377, N373)

Additional action approved by the Steering Committee in response to public comment:

- Work with landowners in Reach 5 of North Creek to restore riparian vegetation and to do stream enhancements (N379).